The Ant Colony

Ants are social insects, living in large colonies. The colony is typically divided into the following castes, or classes: queens (reproductive females), males, and workers (nonreproductive females). Although there are great variations in social structure among ant colonies, certain basic features are common to most species. These features are described in the following section.

What is a Social Insect?

Ants, termites, many bees, and some wasps have a real family life. They live in communities, and the members of a community depend on one another.

There are more than a million different species, or kinds, of insects in the world. Insects include beetles, crickets, butterflies, and houseflies. Insects come in many different shapes, sizes, and colors. But there are some things that all insects have in common. They all have six legs and bodies that are divided into three main parts. They all have tough, shell-like body coverings. And most, but not all, have wings.

Ants, termites, bees, and wasps may look a lot like these other insects. But as social insects, they lead very different lives.

Why Are Ants Social Insects?

Ants are social insects because they live and work together in communities. Here, they feed and protect one another. They raise and care for their young. This way of life is very different from that of solitary insects that spend most, and sometimes all, of their lives alone.

An ant community is called a colony (KAHL uh nee). Life in an ant colony is very organized. Each member has a job to do, from laying eggs to gathering food to fighting.

For most ants, colony life centers around the nest. The nest may be underground, in a mound, or even among the treetops. When ants build a nest, the dirt that piles up around the entrance forms an anthill.An ant colony is a very busy place. It can also be very crowded. There may be hundreds, thousands, or even millions of ants in a single colony.

Social Castes

Some colonies have one queen; other colonies have several. The queens are fed and otherwise tended by the workers. The males' only function is to mate with the queens.

The workers carry out such tasks as enlarging and protecting the nest, tending queens and young, and foraging. There may be only one kind of worker, or there may be several kinds, with body structures specialized for different types of work. The activity of workers is coordinated mostly through pheromones and body contact.

Depending on the species, queens live about 5 to 30 years, making them the longest-lived insects. Workers live about 1 to 3 years. Males live only for a mating season.

Ants have complex social organization and specialized castes.

Who’s Who in an Ant Colony?

Like most social insects, ants have three castes, or classes. There are queen ants, worker ants, and male ants.A queen does not rule the colony, but she is an important member. She has one job—to lay eggs. Without her, a colony would die out. The reason is that only the queens in most species of ants can reproduce. They also live the longest—10 to 20 years. A colony may have one or more queens. A European wood ant mound, for example, may have hundreds of queens.

Worker ants may be the smallest, but they do the most work. All the workers are females. They care for the queen and her young. Worker ants build and repair the nest. They search for food and fight off enemies. Worker ants usually live one to five years.

Most male ants live only a few weeks or months. They do not work, and they die shortly after mating with young queens.

What Does an Ant Nest Look Like?

Most ant species build underground nests. Worker ants dig tunnels and chambers, or rooms, in the soil. As the colony grows, workers add more tunnels and chambers to the nest.

Ant colonies can grow to be quite large. Some tropical ants build downward to make more room. Their nests may reach 20 feet (6 meters) below the ground. Others, such as European wood ants, build upward. They build huge mound nests that may be 5 feet (1.5 meters) tall. Then the ants connect the mounds with scent trails. The group of nests may cover an area as large as a tennis court. Millions of ants may live in these nests.

The chambers in an ant nest have many different uses. The queen has her own chamber for laying eggs. Some chambers are nurseries for the growing young. Food is stored in other chambers. Still other chambers are resting places for hard-working ants!

Starting A Colony

Usually once a year, a colony produces a generation of queens and males. Queens develop from larvae fed a highly nutritious substance secreted by workers. Males develop from unfertilized eggs.

The queens and males are winged; they leave the nest in a series of large swarms, known as nuptial flights. Each swarm consists of either all queens or all males. The ants fly to other areas to mate with ants from other colonies. The males die after the flight. The queens drop to the ground, shed their wings, and look for a place to lay their eggs. After a single mating, a queen can lay fertilized eggs for several years. Unfertilized eggs are usually laid sometime in the spring or summer. The eggs develop into larvae, the larvae into pupae, and the pupae into adults---a process called complete metamorphosis.

The queen tends her first brood of offspring during their larval and pupal stages. This generation consists only of workers, who then take over the duties of tending the queen and her subsequent broods.

How Does a Queen Ant Start a Colony?

Most species of ants start a new colony in the same way. A queen ant is born in one colony, but she usually leaves that colony to start a new one. As young queens grow, they develop wings. A few weeks after becoming adults, young queens fly out of the nest to mate with winged males. The queens then shed their wings and look for nesting places.

When a young queen finds a nesting spot, she builds a chamber and seals herself inside. Then she begins to lay eggs. The queen cares for the eggs, which develop into larvae (lahr vee) and then pupae (PYOO pee). The queen feeds the young with her saliva. She does not eat during this time. Her body absorbs the unneeded wing muscles as food.

The eggs develop into small, female worker ants. Some of these workers leave the nest to find food for the colony. Others build onto the nest. The queen lays more eggs. Most develop into female workers. Others develop into males and young queens.

What Do Worker Ants Do?

Worker ants work¾and they work hard. All workers are females. But they very rarely become queens or reproduce. Instead, they care for the queen, the young ants, and the nest. Without its workers, an ant colony could not survive.

Worker ants may have one job or several jobs. They may keep the same job all their lives or change jobs from time to time. Some workers gather food for the colony. They store the food they harvest in special chambers in the nest. Other workers feed and care for the queen and her developing young. Still others build the chambers and tunnels. They use their saliva to make the dirt walls hard.

Some worker ants are soldiers. They defend the colony. In many species, soldier ants are larger than the other workers. The soldiers fight off enemy ants or insects. They may also use their large heads to block the entrances to the nest.

Who Is Minding the Eggs?

Ants go through four different stages, or steps, of growth. These stages are egg, larva, pupa, and adult. Worker ants care for the young ants through each stage.

After a queen ant lays her eggs, worker ants take them to hatching chambers. There, the workers care for the eggs and often groom them by licking. The eggs hatch in a few days to become larvae. During the larvae stage, the young ants look like tiny white worms.

Worker ants move the larvae to new chambers and feed them for a few weeks until they become pupae. In some species, the larvae spin cocoons before they become pupae. In other species, the pupae are covered only by thin, see-through skin. Pupae do not eat or move. But they do change. In two to three weeks, adult ants come out of the cocoons or skin. They are now ready to go to work!

How Do Ants Recognize Each Other?

Ants in a colony have a special odor that helps them recognize one another. Outsiders or enemies have different odors. Soldier ants smell these invaders and kill them.

Ants do not have ears. They “hear” vibrations through their sense organs. An ant’s antennae are its most important sense organ. Ants use their antennae to smell, touch, taste, and hear. It’s easy to see why an ant’s antennae are always moving. Antennae help ants find and taste food. They help ants recognize and touch one another. Antennae even help ants find their way.

Most ants have two compound eyes. A compound eye has many lenses. (A human eye has only one lens.) Because of their compound lenses, ants see things broken up, like an image in a kaleidoscope. Ants see movement better than shape.